

Notice of Allowability

Application No.

10/661,039

Examiner

PHUC T. DANG

Applicant(s)

MIN ET AL.

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to election filed on March 15, 2005.
2. ☒ The allowed claim(s) is/are 1-87.
3. ☒ The drawings filed on 12 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 122205
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

PHUC T. DANG
PRIMARY EXAMINER

PD 

Art Unit: 2818

DETAILED ACTION

Restriction/Election

1. Response to the Applicant's election filed on March 15, 2005 has been acknowledged.

In response to the election, Applicants elected Group II (claims 53-87) with traverse, drawn to a method of forming a magnetically shielded magnetic tunnel junction (MTJ) cell, classified in class 438, subclass 3.

The response to the election with traverse found persuasive because the fields of search for Groups I and II are clearly and necessarily co-extensive as discussed by the Applicants. Therefore, the restriction filed in the last Office action has been withdrawn as the Applicant's requested.

Examiner's Statement of Reasons for Allowance

2. Claims 1-87 are allowed.
3. The following is an examiner's statement of reasons for allowance:

None of the prior art teaches an apparatus and a method of forming a magnetically shielded magnetic tunnel junction (MTJ) cell, comprising a layer of magnetically shielding material formed covering the portion of the insulation on the substrate and abutting the portion of the insulation on the sides of the cell, the shielding material being thereby electrically insulated from the cell and the substrate by the insulation; and a second layer of insulation formed over the magnetic shield, the layer not contacting the top of the MTJ cell in combination with the other structure found in the independent apparatus claim 1 and with other steps found in the independent method claim 53.

Art Unit: 2818

None of the prior art teaches an apparatus and a method of forming an array of shielded MTJ cell, comprising a patterned magnetic shield formed over the insulating layer on the substrate, the shield conformally abutting and contacting at least a portion of the insulating layer on the side of each MTJ cell; and a second layer of insulation formed over the magnetic shield, the layer not contacting the top of the MTJ cell in combination with the other structure found in the independent apparatus claim 20 and with other steps found in the independent method claim 62.

None of the prior art teaches an apparatus and a method of forming an array of MTJ cell shielded by stabilized magnetic shields, comprising a patterned stabilized magnetic shield formed over the insulating layer on the substrate, the shield having a first patterned portion and a second portion, wherein the first patterned portion conformally abuts and contacts at least a portion of the insulating layer on the side of each MTJ cell; and a second layer of insulation formed over the magnetic shield, the layer not contacting the tops of the MTJ cells in combination with the other structure found in the independent apparatus claim 36 and with other steps found in the independent method claim 72.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submission should be clearly labeled "Comments on Statement of Reasons for Allowance".

Art Unit: 2818

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is (571) 272-1776. The examiner can normally be reached on 8:00 am-5:00 pm.
6. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and After Final communications.
7. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Phuc T. Dang

PD 

Primary Examiner

Art Unit 2818